

IN THE CLAIMS

We claim:

1. A method of mixing chemicals in a single wafer process:

flowing a chemical into a valve system having a tube of a known volume;

filling said tube with said chemical to generate a measured amount of said chemical; and

using said measured amount of said chemical in a single wafer process.

2. The method of claim 1 wherein said valve system comprises a 6-port valve.

3. The method of claim 1 wherein said valve system comprises two 3-port valves.

4. A method of mixing chemicals comprising:

flowing a chemical into a valve system having a tube of a known volume;

filling said tube with said chemical to generate a measured amount of said chemical;

flowing DI water into said valve system and pushing said measured amount of said chemical into a chamber with said DI water; and

continuing to flow said DI water into said chamber until a predetermined level is reached to form a mixed solution.

5. The method of claim 4 further comprising dispensing said mixed solution onto a single spinning wafer by pressurizing said chamber.

6. The method of claim 4 wherein said valve system comprises a 6-port valve.

7. The method of claim 4 wherein said valve system comprises two 3-port valves.

8. A method of mixing chemicals comprising:

flowing a chemical into a valve system having a tube of a known volume;

filling said tube with said chemical to generate a measured amount of said chemical;

flowing DI water into a first conduit and into a second conduit, wherein said DI water in said first conduit flows into said valve system to push said measured amount of chemical into a third conduit;

combining the flow of said measured amount of chemical and said DI water in said third conduit with said flow of DI water in said second conduit; and

dispensing said combined flow onto a spinning wafer.

9. The method of claim 8 wherein said valve system comprises a 6-port valve.

10. The method of claim 8 wherein said valve system comprises two 3-port valves.

11. A method of mixing chemicals comprising:

flowing a chemical into a first valve system having a first tube of a known volume and filling said first tube with said chemical to generate a measured amount of said chemical;

flowing DI water into a second valve system having a second tube of a known volume and filling said second tube with said DI water to generate a measured amount of said DI water; and

flowing an inert gas into said first and second valve systems to push said measured amount of said chemical and said measured amount of said DI water into a chamber.

12. The method of claim 11 wherein said first and said second valve systems each comprise a 6-port valve.

13. The method of claim 11 wherein said first and second valve systems each comprise two 3-port valves.

14. Pushing a chemical into a valve system with a gas wherein said valve system has a tube of a known volume and using a hydrophobic membrane to separate the chemical and the gas when filling the tube.

15. The method of claim 14 wherein said valve system comprises a 6-port valve.

16. The method of claim 14 wherein said valve system comprises two 3-port valves.